Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V (DRAFT PERMIT) NO. V-004-002
HENDERSON MUNICIPAL POWER & LIGHT, STATION ONE
HENDERSON, KY
FEBRUARY 11, 2004
RALPH E. GOSNEY, REVIEWER
PLANT I.D. # 21-101-00012
APPLICATION LOG # 56105

SOURCE DESCRIPTION:

An application for a renewal to the Title V Permit, V-97-013, for the Henderson Municipal Power & Light, Station One (Henderson) was received on October 29, 2003. The submittal included Title IV Acid Rain Permit renewal forms and a nitrogen oxides (NO_x) Budget Permit application.

The facility is classified as a Title V major source of air pollution based on the potential to emit more than 100 tons per year (tpy) of particulate matter less than 10 micrometers (PM_{10}), carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen oxides (NO_x). In addition, the facility has the potential to emit more than 10 tpy of hydrogen chloride (HCl) and hydrogen flouride (HF).

Henderson has stated in their application that there has been no physical changes at the facility, since the submission of the original Title V permit application, but the applicable rules have changed regarding NO_x emissions from Emission Unit 02 (Unit #6), at the facility.

The existing Title IV Acid Rain Permit (AR-96-16) expired December 31, 2000. The existing Title V Permit (V-97-013) will expire on July 27, 2004. The Title V renewal application, Acid Rain Permit application, and a NOx Budget application were received on October 29, 2003.

The following is a list of significant emission units.

E. Unit 01 Indirect Heat Exchanger, Spreader Stoker

E. Unit 02 Indirect Heat Exchanger, Spreader Stoker w/Flyash Reinjection

E. Unit 03 Diesel Generator

E. Unit 04 Diesel Generator

E. Unit 05 Receiver hopper, Conveyor #1, Conveyor #2, Conveyor #3, Primary crusher, and Coal Stockpile

COMMENTS:

E. Unit 01 (Unit 5) Indirect Heat Exchanger, Spreader Stoker

The unit is a 174 mmBtu/hr indirect heat exchanger for the combustion of coal. The unit was constructed in 1955, has a spreader stoker for spreading of the coal prior to combustion, and a multiclone for control of particulate matter (PT).

The following regulations are applicable to the unit:

401 KAR 61:015 Existing indirect heat exchangers;

Regulation No. 7 Kentucky Air Pollution Control Commission Prevention and Control of Emissions of Particulate Matter from Combustion of Fuel in Indirect Heat Exchangers; and

40 CFR, Part 64 Compliance Assurance Monitoring (for PM)

401 KAR 61:015 and Regulation No. 7 applies to the operating and emission limitations for opacity and PT. 40 CFR 64 applies to assurance monitoring for PT from the unit. Per 401 KAR 61:015 and Regulation No. 7, emissions shall have an opacity less than or equal to 40%, based on a six-minute average, except under conditions when building a new fire, cleaning the firebox, or blowing soot, for a period or periods aggregating not more than six minutes in any sixty minutes which is greater than 60% opacity. Per 40 CFR, Part 64, compliance for the opacity limit and compliance monitoring will be demonstrated by Reference Method 9 testing once per daylight shift, when the unit is in operation.

Per 401 KAR 61:015 and Regulation No. 7, maximum emission of PT shall not exceed 0.4 lb/mmBtu. The permittee may assure continuing compliance with the particulate emission standard by operating the affected facility and associated control equipment such that the opacity reading by Reference Method 9 does not exceed the upper limit of the indicator range developed from Reference Method 9 readings during the stack tests. If 5% of Reference Method 9 results conducted in a calendar quarter show excursions from the indicator range, the permittee shall contact the Division within 30 days after the end of the quarter to schedule a stack test to demonstrate compliance with the particulate standard while operating at the conditions which resulted in the excursions. The Division may waive this testing requirement upon a demonstration that the cause of the excursions has been corrected, or may require stack tests at any time pursuant to Regulation 401 KAR 50:045, Performance tests.

401 KAR 61:015, Existing indirect heat exchangers, applies to the operating and emission limitations for sulfur dioxide (SO_2). Emission of SO_2 shall not exceed 6 lb/mmBtu. Compliance will be shown by the calculation of emission, based on the AP-42 emission factor from the following formula: Sulfur dioxide = [(38 x percent sulfur in coal lb/ton from each shipment of coal received) divided by (coal heating value from each shipment of coal received in mmBtu/ton)].

The permittee shall monitor and record the heating value, ash and sulfur content of coal by performing analysis on each shipment of coal received. The permittee shall monitor and record the

amount of fuel combusted on a monthly basis.

EPA Reference Method 5 or equivalent shall be performed within 1 year from issue of this permit to determine the amount of PM emissions per ton of coal processed. The heating value of coal used during the test shall be specifically tested and documented. The upper limit of the indicator range shall be developed from the Reference Method 9 readings during the stack tests. The amount of coal combusted (tons), the heating value of coal from a coal analysis (mmBtu/ton), and the calculated emission factor (lbs of PT/mmBtu) shall be documented and reported with the test results. If no additional stack tests are performed, excluded the test performed within 1 year from issue of this permit, the permittee shall conduct one performance test for particulate emissions within the third year of the term of this permit to demonstrate compliance with the allowable standard.

E. Unit 02 (Unit 6) Indirect Heat Exchanger, Spreader Stoker w/Flyash Reinjection

The unit is a 390 mmBtu/hr indirect heat exchanger for the combustion of coal. The unit was constructed in 1968, has a spreader stoker for spreading of the coal prior to combustion, and a multiclone and electrostatic precipitator for control of particulate matter (PT).

The following regulations are applicable to the unit:

401 KAR 52:060	Acid rain permits;
401 KAR 51:160	NO_x requirements for large utility and industrial boilers;
401 KAR 61:015	Existing indirect heat exchangers;
Regulation No. 7	Kentucky Air Pollution Control Commission Prevention and Control of Emissions of Particulate Matter from Combustion of Fuel in Indirect Heat Exchangers; and
40 CFR, Part 64	Compliance Assurance Monitoring (for PM)

401 KAR 52:060, Acid rain permits, applies to Emission Unit 02 (Unit 6) for the prevention, abatement, and control of air pollution and incorporates by reference the federal acid rain provisions as codified in 40 CFR Parts 72 to 78. The unit does not have a NOx limit set by 40 CFR, Part 76. The unit does have a SO_2 allowance of 810 in 40 CFR, Part 73.10 for each year from 2000 to year 2009. There are no controls for SO_2 or NO_x on the unit.

401 KAR 51:160, NO_x requirements for large utility and industrial boilers, and 40 CFR 97, Subpart C, apply to Emission Unit 02 (Unit 6). The NO_x Budget Permit application for this unit was submitted to the Division, and received on October 29, 2003. Requirements contained in that application were incorporated into and made part of the NO_x Budget Permit. Pursuant to 401 KAR 52:020, Section 3, the source shall operate in compliance with those requirements.

401 KAR 61:015, Existing indirect heat exchangers, and Regulation No. 7, Kentucky Air Pollution Control Commission Prevention and Control of Emissions of Particulate Matter from Combustion of

Fuel in Indirect Heat Exchangers, apply to the operating and emission limitations for opacity and PT. Per 401 KAR 61:015 and Regulation No. 7, emissions shall have an opacity less than or equal to 40%, based on a six-minute average, except under conditions when building a new fire, cleaning the firebox, or blowing soot, for a period or periods aggregating not more than six minutes in any sixty minutes which is greater than 60% opacity. Per 40 CFR, Part 64, compliance for the opacity limit will be demonstrated by continuous emission monitoring (COM).

Per 401 KAR 61:015 and Regulation No. 7, maximum emission of PT shall not exceed 0.4 lb/mmBtu. The permittee may assure continuing compliance with the particulate emission standard by operating the affected facility and associated control equipment such that the opacity does not exceed the upper limit of the indicator range developed from COM data collected during stack tests. If five (5) percent of COM data (based on a three-hour rolling average) recorded in a calendar quarter show excursions from the indicator range, the permittee shall contact the Division within thirty (30) days after the end of the quarter to schedule a stack test to demonstrate compliance with the particulate standard while operating at the conditions which resulted in the excursions. The Division may waive this testing requirement upon a demonstration that the cause of the excursions has been corrected, or may require stack tests at any time pursuant to Regulation 401 KAR 50:045, Performance tests.

401 KAR 61:015, Existing indirect heat exchangers, applies to the operating and emission limitations for sulfur dioxide (SO_2). Emission of SO_2 shall not exceed 6 lb/mmBtu. Compliance will be shown by the calculation of emission, based on the AP-42 emission factor from the following formula: Sulfur dioxide = [(38 x percent sulfur in coal lb/ton from each shipment of coal received) divided by (coal heating value from each shipment of coal received in mmBtu/ton)].

The permittee shall monitor and record the heating value, ash and sulfur content of coal by performing analysis on each shipment of coal received. The permittee shall monitor and record the amount of fuel combusted on a monthly basis.

EPA Reference Method 9 shall be performed whenever EPA Reference Method 5 testing is performed. All results shall be documented. In addition, COM data shall also be documented during the same testing time interval.

EPA Reference Method 5 or equivalent shall be performed within 1 year from issue of this permit to determine the amount of PM emissions per ton of coal processed. The heating value of coal used during the test shall be specifically tested and documented. The opacity shall be recorded from the COM and from Reference Method 9 readings during the stack tests and reported with the test results. The amount of coal combusted (tons), the heating value of coal from a coal analysis (mmBtu/ton), and the calculated emission factor (lbs of PT/mmBtu) shall be documented and reported with the test results. If no additional stack tests are performed, excluded the test performed within 1 year from issue of this permit, the permittee shall conduct one performance test for particulate emissions within the third year of the term of this permit to demonstrate compliance with the allowable standard.

E. Unit 03 Diesel Generator
E. Unit 04 Diesel Generator

Emission Units 03 and 04 are diesel generators, constructed in 1949, each with a maximum capacity of 1630 hp. The permittee shall monitor and maintain records of the amount of fuel usage on a monthly basis.

E. Unit 05 Receiver hopper, Conveyor #1, Conveyor #2, Conveyor #3, Primary crusher, and Coal Stockpile

401 KAR 63:010, Fugitive emissions, apply to each piece of equipment or activity in Emission Unit 05. No person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate. In addition, reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including the materials processed at each unit listed above shall be controlled with wet suppression and/or enclosures so as to comply with the standards specified in Section 3 of 401 KAR 63:010, Fugitive emissions. Compliance will be demonstrated by observations and records, if applicable, shall be utilized to document failure to comply. Otherwise, compliance is assumed when daily observations indicate that the processes and controls are operating normally.

The permittee shall monitor the amount of coal received and processed through each piece of conveying or handling equipment, including stockpiles, on a monthly basis. Visible emissions from each piece of equipment or operation described for this item or group shall be monitored daily during daylight hours to determine whether conditions appear to be normal or abnormal. If the emissions appear to be abnormal, the permittee must then comply with the deviation reporting. The permittee shall maintain records of the amount of coal received and processed through each piece of conveying or handling equipment, including stockpiles, on a monthly basis.

OPERATIONAL FLEXIBILITY: N/A

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.